



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,582	04/26/2001	Yuchun Wang	4260/P1/CMP/CMP/RKK	8732
32588	7590	04/19/2004	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			NGUYEN, DUNG V	
			ART UNIT	PAPER NUMBER
			3723	26

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 26

Application Number: 09/843,582  
Filing Date: April 26, 2001  
Appellant(s): WANG ET AL

---

Brian M. Dugan  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**  
**APR 20 2004**  
**GROUP 3700**

This is in response to the appeal brief filed 17 February 2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The amendment after final rejection filed on 17 February 2004 has been entered.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 14, 19 and 20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

Art Unit: 3723

**(9) Prior Art of Record**

5,844,030

ANDROS

12-1998

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 14, 19 and 20 stand rejected under 35 U.S.C. 102(b) as being anticipated by Andros (USPN 5,844,030). Andros discloses a scrubber comprising a substrate support adapted to support a substrate, a brush 62 coupled so as to contact a substrate supported by the substrate support, the brush 62 having a surface adapted to contact a surface of a substrate to be scrubbed, a complexing agent 40 coupled to the scrubber brush surface, the complexing agent 40 adapted to chemically bond to metal particles, and a mechanism adapted to generate relative movement between the substrate and the brush 62 (note Fig. 1-9, col. 2, lines 38-67, col. 4, lines 7-56, col. 7, lines 18-65, col. 9, line 66 to col. 13, line 9).

**(11) Response to Argument**

In response to appellant's argument that Andros does not disclose a brush that includes a "complexing agent adapted to chemically bond to metal particles" as required by claims 14, 19 and 20. Andros discloses this limitation in column 10, line 50 to column 11, line 28 as follows: "Turning to FIG. 9, such a molecular sponge material, generally designated 90, is illustrated. Typical molecules of very high charge density are represented by the guest compound Polyethylenimine (PEI) 92 carried by the host molecule, preferably Cyclodextrin 93. PEI molecules have the highest cationic charge density of any known organic polymer, about 17-23 meqs/gram. To fulfill the

Art Unit: 3723

requirements of PVA sponge cleaning brushes capable of containing a GUEST, whose molecular structure could encapsulate a high charged density amine such as PEI, free hydroxyl groups 94 of Cyclodextrin 93 are first cross-linked to available hydroxyl groups 95 of PVA molecules 97. This is accomplished by forming methylene bridges 98 between Cyclodextrin 93 and the PVA molecule 97 by use of suitable aldehyde(s) such as formadehyde. The methylene bridge is not described in detail, as it has been described previously in connection with cationic sponge material 40. Once the methylene groups cross-link cyclodextrin molecule 93 to PVA molecule 97, the PVA now has incorporated into its structure a host molecule which can carry a guest. In this preferred embodiment the guest is Polyethylenimine 92, whose structure contains a high charge density of 17-23 meqa/gram. In effect, the PV now hosts the highly charged polyethylenimine. After extended use, if the PEI becomes saturated with charged particles, it can be induced to leave the host by changes in the environment. For example when used in cleaning system, a pH solution can be used which changes the pH in the environment, causing the PEI to be released. The sponge can now be "recharged" with new PEI. Alternatively, the PEI can be induced to release the material it has collected without leaving the host. The possibilities for the used of PEI carried within a porous medium such as the described host sponge are practically limitless. As with the previously described embodiment, the porosities and degrees of softness and harness of the cleaning sponges and brushes are controlled by the amount of mixed aldehydes utilized to cross-link the hydroxyl groups, thus the degree of acetylation, controls these physical properties. Those familiar with the art are well versed in this

Art Unit: 3723

technique. In use, a host sponge containing PEI guests scavenges heavy metals, gases such as carbon dioxide, nitrogen oxides, halogens and volatile organic and other dissolved water born impurities. These process can be reversed to reclaim valuable metals by adjusting the pH". Further, since appellant did not clearly define "chemically bond" in the disclosure of the instant application, Andros discloses in column 12, lines 58-65 as follows: "Cationic PVA and host PVA as described above represent two materials containing cationic radicals. The charged portion of these materials act as a chelating agent, scavenger, fixative, surface charge modifier, absorbent and binder. These unique properties are capable for example of scavenging such metal ions as Nickel, Copper, Palladium, and Platinum group metals as well as halogens, particularly, Chlorine removal." in the same degree of "chemically bond". As a result, claims 14, 19 and 20 are anticipated by Andros.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

DVN

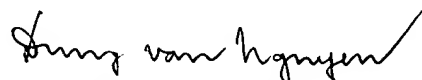
April 15, 2004

Conferees

Joseph J. Hail Allan N. Shoap 

Dung Van Nguyen

Dugan & Dugan, PC  
Tarrytown, New York



**DUNG VAN NGUYEN**  
**PRIMARY EXAMINER**